



Hawaii Energy Policy Forum

Energy Efficiency Overview



STEVEN RYMSHA

(808) 246-8287

EMAIL: SRYMSHA@KIUC.COOP

SENIOR ENERGY SOLUTION ENGINEER

CLAURINO BUENO

(808) 246-8280

EMAIL: CBUENO@KIUC.COOP

RESIDENTIAL ENERGY SERVICES SPECIALIST

PAUL DANIELS

(808) 246-8275

EMAIL: PDANIELS@KIUC.COOP

COMMERCIAL ENERGY SERVICES SPECIALIST

OCTOBER 29, 2010

DSM & Energy Efficiency Program History

1992 - 1997



- 1992 – Development of IRP Framework as a utility planning tool
- 1993 – First IRP completed by Kauai Electric (KE)
- 1994 – KE files DSM Detailed Tactical Implementation Plan
- 1997 – PUC approves KE DSM Tactical Implementation Plan

DSM & Energy Efficiency Program History

1998 - 2002



- 1998 - DSM programs implemented
 - 6 DSM Programs approved
 - 3 DSM Programs implemented: 2 Residential & 1 Commercial
- 1999 - New Programs Implemented
 - Residential Retrofit Program combined with Residential Direct Install Program.
- 2002 - KE becomes KIUC.
 - KIUC continues DSM programs previously administered under KE.
 - KIUC, as a new member-owned cooperative, begins to look at new ways to provide more comprehensive energy services.

DSM & Energy Efficiency Program History

2004



- 2004
 - KIUC initiates a new Energy Efficiency Potential Study.
 - Residential Direct Install (RDI) program is discontinued for lack of viable market.
 - KIUC begins to consider ways to expand its programs beyond traditional Total Resource Cost (TRC) based DSM programs.
 - New concepts for programs are presented to KIUC's Board of Directors.

DSM & Energy Efficiency Program History

2005 - 2006



- 2005
 - Initiation of Energy Services and Member Advantage Program Development.
 - Residential programs designed to promote the Cooperative and BOD objectives.
- 2005 Tested voltage regulation technology on a distribution circuit. Switching of distribution circuit configuration proved to be a problem and limited effectiveness.
- 2006
 - Home Visits – High Bill Inquiries (HBI) program initiated, includes bill analysis tool.
 - Solar Loan – Implementation begins March 2006
 - Appliance Meter Service

DSM & Energy Efficiency Program History

2007 - 2009



- 2007
 - Qualifying Member Appliance Replacement Program.
 - Solar Water Heater Savings Pilot Program (Act 240).
- 2008
 - IRP completed and filed with the Commission.
 - IRP features a DSM plan derived from the 2005 KEMA Energy Efficiency Potential Study.
 - IRP not approved due to Clean Energy Scenario Planning Docket.
- 2009
 - Light Up A Life Program – To complement Kauai Food Bank (KFB) Food Drive.

DSM & Energy Efficiency Program History

2010



- 2010
 - Residential Retail Lighting Program.
 - ✦ Partnered with Ace Hardware and GE.
 - Residential Heat Pump Water Heating Rebate.

Commercial Retrofit Program



- Survey of the facility
 - Opportunities identified.
 - Recommendation based on TRC-based analysis.
 - Phased-in implementation planning for large facilities.
 - Energy Survey Report provided.
 - Project management support offered.
- Provides rebates of 50% to 100%
 - 50% of cost (non-free riders).
 - 80% of incremental investment cost.
 - 100% of cost for direct install lighting.

Commercial Retrofit Program



- Federal Stimulus Funded Programs
 - State, and County government, plus non-profit
 - ✦ 100% funding for TRC qualifying measures
- Enhanced Services
 - Periodic workshops for commercial accounts on various topics including, equipment and systems maintenance, emerging technologies, project financing opportunities, lighting and others.

Current Energy Efficiency Programs



- Solar Water Heating Loan Program
 - Zero interest loans provided by KIUC, local credit union, and County Housing Agency
- Solar Water Heating Rebate Program
 - \$800 rebate, no TRC eligibility required
- ACE Hardware Residential Retail Lighting Program
- Light-Up-A-Life CFL Program
- Efficient Appliance Replacement Program

Current Energy Efficiency Programs



- Qualified Member Appliance Replacement Program
- Appliance Metering (Educational)
- Residential Home Visits (Educational)
- New Member Lighting Program
- Heat Pump Water Heater Rebate
- Federal Stimulus Funded Programs
 - Energy Star Refrigerator Rebate Program
 - Solar Water Heating Rental Program

Residential Efficiency Program Accomplishments



- CFL's Distributed & Installed:
 - 76,252
- Showerheads Installed:
 - 5,294
- Faucet Aerators Installed:
 - 13,406
- Water Heater Insulation:
 - 1,799
- Solar Water Heaters:
 - 1,016
- Heat Pump Water Heaters:
 - 2
- High Bill Inquiry Home Visits:
 - 505
- Qualified Member Appliance Replacement Program:
 - Refrigerators 43
- Appliance Rebates:
 - Refrigerators 1,449
 - Clothes Washers 1,128
 - Dishwashers 257

Pay As You Save

-VS-

KIUC's Zero Interest Solar Loan Program

Solar Water Heating Savings Pilot Program

- Installed
 - **3**
- Period
 - June 1, 2007 – June 30, 2010

Solar Water Heat Loan Program

- Installed
 - **129**
- Period
 - June 1, 2007 – June 30, 2010

2010 National Renewable Energy Lab (NREL) Residential Study



- Technologies that pass Total Resource Cost analysis:
 - Energy Star Room Air Conditioners
 - Low Flow Shower Heads
 - Pipe Wrap
 - Water Heater Blanket
 - Demand Hot Water Temperature Reduction
 - Energy Star Clothes Washer
 - High Efficiency Refrigerator - Energy Star
 - CFL and halogen Lighting
 - Replace-on-Burnout 2 Lamp 4'T8 w/ 1 Electric Ballast
 - High Efficiency Pool Pump and Motor

DSM & Energy Efficiency Program Beyond 2010



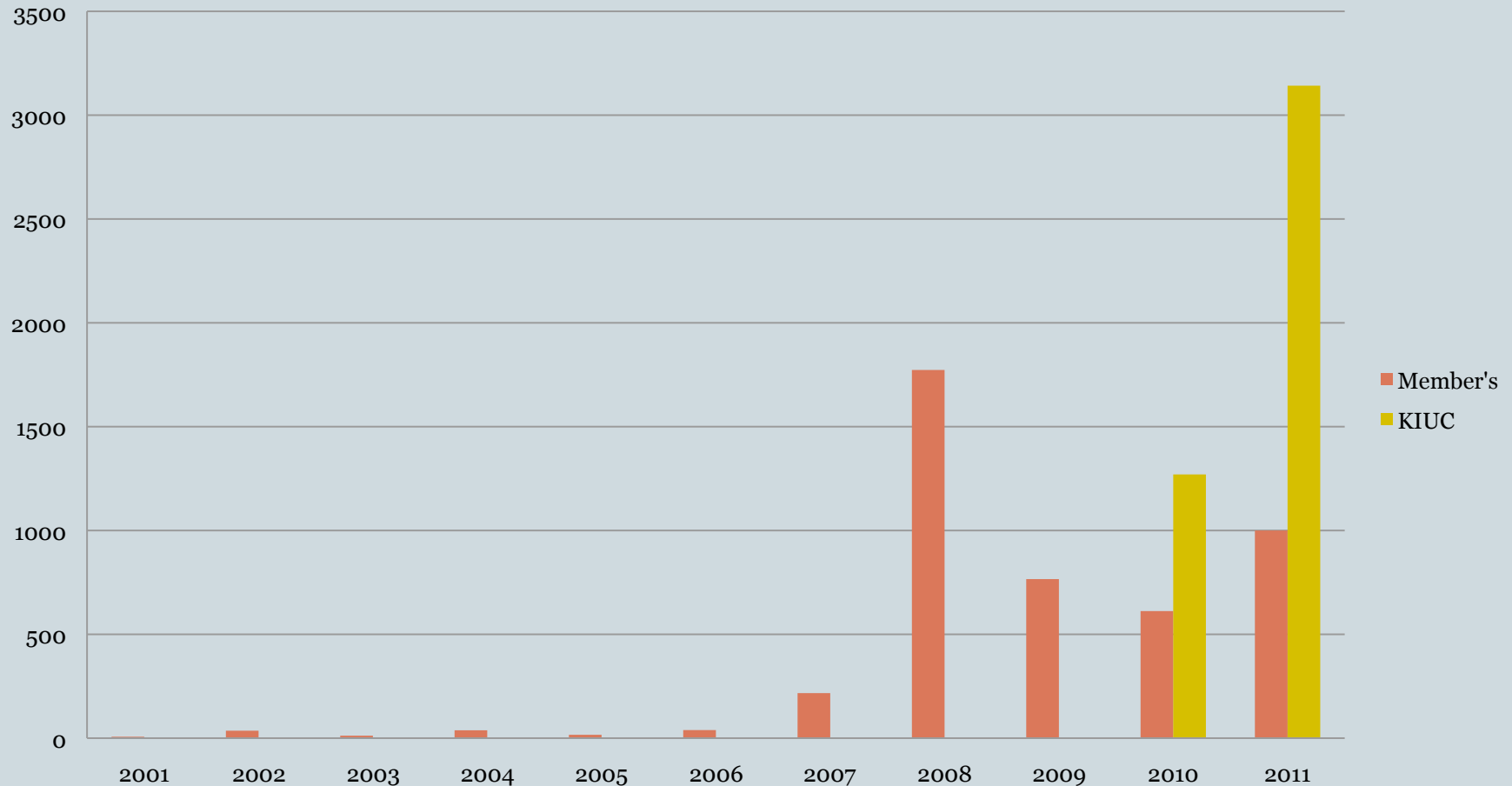
- Extreme interest from KIUC Board of Directors and Management.
- Home Area Network Pilot to be conducted with the island wide smart grid rollout.
- Smart meters infrastructure will allow members to better understand their demand profiles and usage.
- Evaluate potential to develop load control programs. (price responsive and load limiting)
- KIUC testing day lighting, utility pole mounted PV, small water cooled air conditioners, LED and induction lighting technologies.

DSM & Energy Efficiency Program Beyond 2010



- Working on PUC application to pilot OPOWER's advanced customer engagement platform for Residential market.
- Incandescent bulb exchange.
- Planning to install and test load shifting air conditioner.
- Considering future rate design to facilitate increased energy efficiency and distributed generation.

Kauai Photovoltaic Panel Capacity (kW) for Members and KIUC's announced projects



Questions?



Steven Rymsha
(808) 246-8287

Email: SRYMSHA@KIUC.COOP

SENIOR ENERGY SOLUTION ENGINEER

Claurino Bueno
(808) 246-8280

Email: CBUENO@KIUC.COOP

RESIDENTIAL ENERGY SERVICES SPECIALIST

Paul Daniels
(808) 246-8275

Email: PDANIELS@KIUC.COOP

COMMERCIAL ENERGY SERVICES SPECIALIST